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COCARDE – a research platform for a new look to ancient mounds

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Carbonate mounds are important contributors of life in different settings, from warm-water to cold-water environments, and throughout geological history. Research on modern carbonate mounds over the last years made a major contribution to our overall understanding of these particular sedimentary systems. By looking to the modern carbonate mound community, some fundamental questions could be addressed, until now not yet explored in fossil mound settings.

The international network COCARDE (Cold-Water Carbonate Reservoir Systems in Deep Environment) is a platform for exploring new insights in cold- and warm-water carbonate mound research of recent and ancient mound systems (http://www.cocarde.eu). One aim of the COCARDE network is to bring scientific communities together, to study recent carbonate mounds in midslope environments in the present ocean, and to investigate fossil mounds spanning the whole Phanerozoic time.

Scientific challenges on modern and ancient carbonate mound systems got already well defined during two dedicated workshops of the COCARDE network: 1) the ESF Magellan COCARDE Workshop in Fribourg, Switzerland, January 21-24, 2009, and 2) the ESF MiCROSYSTEMS – FWO COCARDE Flanders – ESF CHECREEF Workshop and Field Seminar, Oviedo, Spain, September 16–20, 2009.

The wide spectrum of disciplines in geosciences and biology are summarized in the following five topics for the carbonate mound research: i) Palaeoenvironment; ii) The Microbial Filter; iii) Petrophysical Characterization; iv) Connectivity and Compartmentalization – the Fluid System; v) Advancing our Insight in Phanerozoic Reef Systems – the Slope Niche. One of the most important outcomes of these meetings was the identification of the need for combined research efforts on fossil and modern carbonate settings to provide the baseline reference standard for a better understanding of these exceptional systems and their potential as hydrocarbon reservoirs.